



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

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July 27, 2009

Dr. Roy E. Crabtree  
Regional Administrator  
Southeast Regional Office  
National Oceanic and Atmospheric Administration  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701

Subject: EPA NEPA Comments on NOAA PFEIS for the "Fishery Management Plan for Regulating Offshore Marine Aquaculture in the Gulf of Mexico"; Gulf of Mexico Fishery Management Council; Gulf of Mexico EEZ; CEQ No. 20090206; ERP No. NOA-E91026-00

Dear Dr. Crabtree:

Consistent with our responsibilities under Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the National Oceanic and Atmospheric Administration's (NOAA) Programmatic Final Impact Statement (PFEIS) for the referenced Fishery Management Plan (FMP) for offshore marine aquaculture. The PFEIS was prepared for NOAA (NOAA Fisheries Service) by the Gulf of Mexico Fishery Management Council (Council).

A FMP is required to regulate offshore marine aquaculture since aquaculture is considered a form of "fishing" under the Magnuson Stevens Fishery Conservation Management Act (MSA). As a major federal action, NEPA documentation is required for the FMP which is served by the preparation of this PEIS. The proposed action proposes regional regulations for promoting and managing environmentally sound and economically sustainable marine aquaculture within the federally designated Gulf of Mexico Exclusive Economic Zone (Gulf EEZ). Approximately 13.7% of the Gulf EEZ is considered suitable for aquaculture<sup>1</sup> and 5 to 20 investors could request permits over the next 10 years for aquaculture operations in the Gulf EEZ.<sup>2</sup> EPA has previously provided written NEPA comments on the Program Draft EIS (PDEIS) in a letter dated October 24, 2008.<sup>3</sup> Consistent with its PDEIS comments, EPA offers the following recommendations to guide prospective NEPA analysis and documents associated with each proposed aquaculture-operation permit application tiered from this PEIS.

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<sup>1</sup> P. 53.

<sup>2</sup> P. 1.

<sup>3</sup> Addressed to Dr. Roy Crabtree, Regional Administrator, SE Regional Office, NOAA, from Heinz J. Mueller, Chief, NEPA Program Office.

## NEPA Process

The "PEIS" status infers future tiering with additional NEPA documentation for the prospective aquaculture permit applications. NEPA's regulations allow an agency to conduct a tiered approach to preparing an EIS. Under this approach an agency may issue a broader EIS, e.g., PEIS, at the earlier "need and site selection" stage of a program and issue subsequent more detailed EISs at the program's later more site-specific state.<sup>4</sup> Consequently, EPA has the expectation for an EA and/or EIS to be triggered for each Gulf Aquaculture permit application received. The PEIS is unclear in that regard and whether the Army Corps Of Engineers' (ACOE) siting-permit process will trigger another separate, independent NEPA process.

EPA finds the PEIS, as written, does not suffice to replace any facility-specific reviews for various reasons. The PEIS unfortunately exemplifies the absence of a federal Gulf of Mexico spatial analysis, planning, and an ecosystem-based approach for determining the appropriate balance between conservation, economic activity, user conflict, sustainable use, and determining which kind of activity should be allowed where and whether certain areas of the Gulf should be designated single or multiple use areas. The proposed action represents another piecemeal use to be added to the mix of existing and anticipated uses without a thorough consideration of the impacts of all these uses to the sustainability of the Gulf of Mexico's diverse, complex, and increasingly stressed ecosystems. EPA has identified in the enclosed "Detailed Comments" recommendations for future NEPA analysis to be included in expected future tiered NEPA documentation for each Aquaculture permit application.

## Cumulative Effects/Impacts

The proposed action also represents one more piecemeal use added to a mix of existing and future uses without a thorough consideration of the cumulative effects of all these uses to the Gulf's diverse and increasingly fragile ecosystems. NEPA regulations<sup>5</sup> require the environmental consequences section of an EIS include discussions of direct and indirect effects. *Effects* are defined to include ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or **cumulative**.<sup>6</sup> "*Cumulative impact*" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.<sup>7</sup>

Our comments on the PDEIS repeatedly identified the need for a cumulative effects analysis, which EPA notes remains absent in the PFEIS.<sup>8</sup> For example, the

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<sup>4</sup> 40 CFR §§ 1502.20 and 1508.28.

<sup>5</sup> 40 CFR §1502.16.

<sup>6</sup> 40 CFR §1508.8.

<sup>7</sup> 40 CFR §1508.7.

<sup>8</sup> Id., p. 2.

impacts to predator species attracted to the aquaculture operations' contained concentrations of aquatic organisms,<sup>9</sup> ecological conflicts associated with the potential displacement of native marine inhabitants from areas sited for aquaculture operations,<sup>10</sup> impacts to FMP wild species associated with harvesting native brood stock for aquaculture operations of captive wild species,<sup>11</sup> impacts associated with neighboring or co-located oil and gas operations,<sup>12</sup> and any changes in status of aquaculture operations differing from those projected in the PFEIS, e.g., 5-20 operations. In the enclosed "Detailed Comments," EPA has identified recommendations for future NEPA analyses to be included in the future tiered NEPA documentation for each aquaculture permit application.

### Sufficient Legal Authorities

Because NEPA's objectives in its prescribed decision-making process is to improve the exchange of relevant information, increase communications and trust among affected parties, facilitate informed decisions, enable acceptance and therefore "staying power" of decisions, and decrease the likelihood of costly and lengthy litigation, EPA again raises the issue whether sufficient aquaculture authorities currently exist. NEPA regulations require environmental information be made available to public officials and citizens before decisions are made and before actions are taken.<sup>13</sup> This PEIS has the opportunity to serve the national interests by advising and informing Congress on the status of existing aquaculture, limitations of federal law, and how sustainable operations may be achieved.

The Council's proposed action is controversial. The House Natural Resources Committee Chairman has stated that *Congress did not intend for the MSFCMA to grant authority to NOAA and the Council to regulate offshore aquaculture as fishing under the Act*.<sup>14</sup> Additionally, the proposed action has received harsh criticism from over 100 different environmental groups and local fishing organizations due to concerns of potentially insufficient rules to prevent harmful effects to the ocean environment, e.g., fish-waste and uneaten-food pollution associated with a high concentration of fish packed into underwater.<sup>15</sup>

Furthermore, the proposed 2007 National Ocean Aquaculture Act contains language expressly prohibiting offshore aquaculture being considered as "fishing" under the MSFCMA,<sup>16</sup> which is the legal basis for authorizing the proposed action. Additionally, the Natural Stock Conservation Act of 2007, (S. 533 introduced 2/7/07) would amend the National Aquaculture Act (NAA) of 1980 to prohibit the issuance of permits for marine aquaculture in the EZZ until requirements for permits were enacted

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<sup>9</sup> Id., p. 3.

<sup>10</sup> Id., p. 6.

<sup>11</sup> Id., p. 9.

<sup>12</sup> Id., p. 14.

<sup>13</sup> 40 CFR § 1500.1 (b).

<sup>14</sup> [http://resourcescommittee.house.gov/index.php?option=com\\_content&task=view&id=495&Itemid=27](http://resourcescommittee.house.gov/index.php?option=com_content&task=view&id=495&Itemid=27)

<sup>15</sup> <http://www.eenews.net/EEDaily/2009/02/06/archive/8?terms=+Rahall+urges+nationwide+effort+on+offs+shore+fish+farms%2C+>

<sup>16</sup> <http://www.opencongress.org/bill/110-s1609/show>.

into law. Should either prohibition provision be passed, it would be appropriate to address how either of these provisions might affect MSFCMA- permitted aquaculture operations pursuant to the proposed action.<sup>17</sup>

The controversy may not become acute until the first boat is denied access to a permitted aquatic operation area, whereupon the legal underpinnings for this proposed action may be challenged both in court and by that particular Congressperson in whose district the owner of that first boat denied access resides. As noted in the PFEIS, the submission of an aquaculture permit application will be expensive in addition to the cost of set up and operations. The legal and regulatory framework for open ocean aquaculture will, in large part, determine whether aquaculture operators can succeed in establishing commercial operations as legal and regulatory challenges can be resource consuming. It is appropriate to consider the potential risk and additional cost of defending any MSFCMA-issued permit that could be placed upon an aquaculture permittee by participating in the proposed action.

Based upon EPA's experience, if the proposed action's NEPA public-outreach portion relied on traditional public notice venues (e.g., *Federal Register* and local newspapers), it is likely this FMP did not reach all potentially affected parties. Additionally the undefined specific siting locations, i.e., its use of low resolution maps (e.g., Figure 4.6.1 with pink-highlighted areas to represent all areas considered suitable for aquaculture in the Gulf EEZ) may have hindered that portion of the public potentially directly affected by this action to determine the degree of controversy within the schedule of the proposed action's NEPA process to facilitate mitigation. This reinforces the importance of tiering future NEPA documentation from the PFEIS.

Additionally since the MSFCMA allegedly sufficiently authorizes NOAA and the Council to regulate offshore aquaculture, it is confusing why Congress considers it necessary to draft legislation, i.e., NOAA 2007, to specifically authorize the DOC (i.e., NOAA) to issue offshore aquaculture permits, to establish environmental requirements, exempt aquaculture from the MSFCMA regulations restricting size, season and harvest methods, and authorize funding to implement aquaculture permitting.

EPA believes the "exclusive use" issue is significant because aquaculture is like agriculture in that the fish farmer is seeking exclusive use or control of access to a resource. However in the case of the Gulf, this resource has been traditionally subject to open-access and multiple-use polices and the Public Trust Doctrine, where the government holds submerged and submersible lands in trust for public use in navigation, fishing, and commerce and recreation.

Unlike the leases granted under the Outer Continental Shelf Lands Act which specifically grants the DOI authority to grant leases to the highest qualified responsible bidder for fair market value for the lands leased and rights conveyed by the Federal Government,<sup>18</sup> neither the 1980 NAA or the MSFCMA authorizes NOAA or the Council

<sup>17</sup> See p. 5 of EPA's October 24, 2008, PDEIS comment letter.

<sup>18</sup> 43 U.S.C. §1344 (a)(4).

to convey exclusive access to a restricted area to a private entity (i.e., aquaculture operator). Instead, the MSFCMA only authorizes the Council and NOAA to restrict access to fishing vessels and fishing. Additionally the ACOE's § 10 Rivers and Harbors Act permit will not convey to the prospective permittee any legal right to the exclusive use of the designated portion of navigable waters for aquaculture operations.

It is likely that the capital investment required for a successful aquaculture industry will depend upon an aquaculture operation's ability to secure exclusive use to a designated restricted area of water column and bottom plus the assurance of a sufficient term length, combined with zoning designations. Consequently without a mechanism to convey exclusive access for aquaculture operations, it is unclear how the aquaculture industry and investors would have sufficient property rights and the certainty requisite for capital investment. Since it is easy to access a submerged or partially submerged cage and difficult to protect such an investment without a human presence, how would fish farmers be able to guard their investments from outside intrusion from non-fishing vessels?

The closest the PFEIS comes to addressing this major issue is to state that “[t]he exclusive use of an area means that the offshore aquaculture firms may compete for space in federal waters with other activities, e.g., navigation, fishing, offshore oil development, military activities, recreation, and conservation.”<sup>19</sup> Consequently, it is unclear how the proposed action will accomplish its purpose of developing a regional permitting process for regulating and promoting environmentally sound and economically sustainable aquaculture in the Gulf EEZ. Additional legal sufficiency issues are identified in the enclosed “Detailed Comments” as recommendations for inclusion in future NEPA analysis associated with future tiered NEPA documentation for each aquaculture permit application.

## Summary

In short, the Gulf of Mexico consists of a diversity of complex, little understood ecosystems having unique natural and anthropomorphic characteristics with associated stressors subject to competing uses without an ecosystem-based approach to facilitate the Gulf's future sustainability. These are important issues and since they are absent from the PFEIS, we recommend that they be addressed in the NEPA documents tiering from this PFEIS associated with facility/site-specific permit issuance and the appropriate federal agencies (e.g., DON, MMS, Federal Energy Regulatory Committee<sup>20</sup>) notified and involved in the NEPA review process to insure the success of the aquaculture operations seeking permits. Additionally, the NEPA public involvement process will be particularly important once a location is selected for a permitted aquaculture operation such that someone can actually be denied access: a controversy that can potentially manifest into a lawsuit over any potential encroachment upon traditional fishing grounds and increasing fisheries pressures associated with the proposed action. The legal and regulatory

<sup>19</sup> PFEIS pp. 269 – 270.

<sup>20</sup> FERC is responsible for offshore permitting of hydrologic energy projects while MMS is responsible for wind power and oil and gas permits.

framework for open ocean aquaculture will significantly influence the economic success of commercial aquaculture operations and the continued sustainability of the Gulf's ecosystems.

We appreciate the opportunity to review the PFEIS. We are interested in reviewing the prospective tiered NEPA documents associated with this PFEIS. Should you have questions regarding these comments, feel free to contact Beth Walls (at 404-562-8309 or [walls.beth@epa.gov](mailto:walls.beth@epa.gov)) or Chris Hoberg (at 404/562-9619 or [hoberg.chris@epa.gov](mailto:hoberg.chris@epa.gov)) of my staff.

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz J. Mueller", with a stylized, cursive script.

Heinz J. Mueller, Chief  
NEPA Program Office  
Office of Policy and Management

cc: Dr. Paul N. Doremus – NEPA Coordinator (NOAA): Silver Spring, MD



## Detailed Comments

### NEPA Process

EPA recommends a conflicting and complementary uses analysis of existing and reasonably foreseeable competing uses of the Gulf of Mexico to be attempted because these competing uses have the potential to both impact aquaculture operations and be impacted by these operations. This will assist permit applicant from investing resources in preparing the required application only to later find that conflicting uses will hinder the operation's success.

While the PEIS briefly mentioned areas where aquaculture may be prohibited or should be avoided, i.e., marine reserves, USCG designated shipping related areas, ACOE dredging related areas and shipping channels, areas where hazardous algal blooms (HABs) occur, hard bottom and sea grass areas, artificial reefs, traditionally highly fished areas, areas of current or future oil and gas activities but provides little information to guide the public and the industry on how to avoid these areas, it did not provide a useful mechanism to facilitate the permittee in identifying a suitable area without the undue burden of investigating all existing and future uses. It appears that the permit applicant will be left with the burden of identifying all these potentially conflicting or potentially multiple use areas, which raises the potential for uses to be overlooked and the applicant bearing the associated financial risks.

Additionally, the PEIS-level would have been a good opportunity to evaluate where in the Gulf EZZ is appropriate for single or multiple uses in determining both where aquaculture operations should be sited and federal agency partnerships to facilitate appropriate multiple uses of the Gulf's EZZ. The anticipated emerging offshore wave and energy development, i.e., harvesting wind and tidal energy, may pose a potential for conflict, multiple uses, and joint ventures with aquaculture. Other issues include:

- It could be highly desirable for the fish farmer but possibly inappropriate to locate aquaculture farms in upwelling zones where the farmed fish would compete with wild stocks for food. Such zones were not discussed and would be factor in siting aquaculture operations.
- The PEIS' did mention a potential opportunity for mutually beneficial-use of decommissioned oil rigs for aquaculture but was silent on the issue of platform-removal related issues should the permitted aquaculture operation fail or whether the platform's siting permit could also serve as the aquaculture siting permit and saving the industry from obtaining a permit if the operation is sited within the platform's footprint.
- The Department of Interior's (DOI) decision to proceed with its plans for Gulf of Mexico oil and gas lease sale in August, 2009,<sup>1</sup> was not reflected in the PFEIS and these tracts should be identified to assist a permit applicant in avoiding unnecessary expenses of attempting to permit space conflicting with these leases. While an established oil-rig platform may support or complement aquaculture operations, exploration and rig platform construction activities may not benefit an aquaculture investment. Furthermore if a rig in the eastern Gulf springs a

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<sup>1</sup>June 26, 2009 letter from 24 of Florida's 27 senators and representatives, circulated by Sen. Bill Nelson (D-FL)  
<http://www.eenews.net/Greenwire/2009/07/17/2/>

leak, the spill could turn into an oil slick that gets caught in a fast-moving current that runs south to the Florida Keys. The current turns into the Gulf Stream.<sup>2</sup> When hurricanes Katrina and Rita swept across the Gulf in 2005, the high winds destroyed scores of offshore rigs, damaged hundreds of pipelines and spilled 741,384 gallons of petroleum products into the sea, according to the U.S. Minerals Management Service. One of these spills poured about 76,000 gallons of condensate, a toxic form of liquefied gas, into Gulf waters.

- The Eastern Gulf of Mexico provides unique testing and training ranges used by the U.S. Navy (DON) where it conducts extensive mine countermeasure research and training, including sonar use, mine detonation, and live fire operations.<sup>3</sup> Figure 4.6.1's<sup>4</sup> depiction using pink areas to represent all areas considered suitable for aquaculture in the Gulf EEZ significantly overlaps the Navy's training area. Yet the text only mentions the avoidance of military warning areas for siting purposes. Yet DON's training operations are extensive and occur outside these designated warning areas. The PEIS was silent as to the suitability of investing in aquatic operations within a military research and training area.
- EPA perceives a need for a discussion regarding competing-uses priority determinations, which is important information to aquaculture operation permitting and to any entity exploring an aquaculture investment within the Gulf EZZ. For example, DON's activities will trump any permit-granted aquaculture rights. Furthermore since oil, gas, and mineral leases provide exclusive access rights, this use will also likely preempt any rights associated with any issued aquatic permit. Because the only type of exclusivity that a MFCMA-issued aquaculture permit can convey is access to fishing, this could be among the lowest priority designated uses to the Gulf's outer continental shelf.<sup>5</sup>
- The proposed action's potential to impact states control over their fisheries, e.g., use of non-native fisheries or genetically modified fisheries is an important issue remaining to be addressed. While only allowing Council- managed species native to the Gulf EZZ will ensure that any species being cultured is under an FMP and managed according to MSCMA National Standards [note: there do not appear to be any national standards for aquaculture in the MSCMA] and *the Council could amend this FMP at any time to add or remove species included in the aquaculture fishery management unit.*<sup>6</sup>

This inherent flexibility given to the Council does not appear to rule out potential conflicts with state requirements ruling out non-native species or genetically modified organisms (GMO) where the Council in the future determines their use acceptable. Furthermore there may be a market preference for "wild stock" over "cultured stock" for health concerns, e.g., concerns the omega 3 and 6 ratio will be affected when cultured fish are fed vegetable-food sources in lieu of their natural prey to avoid harvesting 2 pounds of wild stock to feed every pound of cultured stock produced. Some states may prefer their fisheries to be eligible for "wild" designation and the proposed action may threaten that ability.

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<http://www.stltoday.com/stltoday/news/stories.nsf/sciencemedicine/story/CEDA171DF244DDA6862575D8000C2B9C?OpenDocument>

<sup>3</sup>See p. 6 of EPA's October 24, 2008, PDEIS comment letter.

<sup>4</sup> P. 71.

<sup>5</sup> P. 12.

<sup>6</sup> P. J-8.



- Unfortunately, the PFEIS limited its discussion of hazardous algal blooms (HAB) and low dissolved oxygen (DO) issues to the context of siting.<sup>7</sup> While in theory the open water currents will dilute the expected organic loadings associated with continual concentration of aquatic organisms at the point of fish concentration, a potential may exist for these same currents to concentrate and stagnate nutrient-enriched waters in other areas, e.g., eddies, potentially triggering algal blooms, feeding existing algal blooms, or exacerbating low DO conditions, which are not limited to the Gulf's infamous hypoxic zone. For example, the Beijing Olympics sailing regatta was almost derailed by a huge algal bloom triggered by the rapid expansion of farmed seaweed.<sup>8</sup> This issue remains to be addressed including a mechanism to determine whether this would be a problem. Unfortunately, the dearth of knowledge, research, and limited experience specifically with offshore aquaculture, limits the current understanding of potential environmental concerns.
- While the PEIS identified potential predators that may impact aquaculture operations, it did not discuss aquaculture operations' potential to impact predator species attracted to high numbers of concentrated fish in containment. The concern is that aquaculture operations do not lead to threatened and endangered status listing for currently unlisted predators.

### Cumulative Effects/Impacts

While the anticipated 5 – 20 aquaculture operations seems small in number, the PFEIS is unclear whether the areal extent these operations could encompass the entire 13.7% of the Gulf EEZ currently considered suitable for aquaculture.

- Will there be a limit to the number of aquaculture operations permitted within the “aquaculture suitability” area? Will more of the Gulf EEZ possibly be in the future determined suitable for aquaculture should the demand for additional space increase? In other words, the cumulative effects of 20 aquaculture operations versus 20,000 operations within a fixed region of the Gulf EEZ remain undetermined. The proposed optimum-yield cap on is not the same thing as capping the density of fish allowed to be contained within a permitted site.
- The above discussed conflicting and competing uses, existing and foreseeable, may also have cumulative effects upon the proposed aquaculture in the Gulf, including the potential for encroachment upon a permitted site. These should be important to the decision to permit an aquaculture facility and to the investors of such an entity. Aquaculture operations as outlined in this PFEIS will require a significant investment of resources and sufficient information should be made readily available to facilitate their success and ability to identify risks, both as to the nature of and potential for failure.
- The potential cumulative impacts to existing designated EFH remain unaddressed. Vast portions of the Gulf of Mexico have been designated as EFH for various aquatic species. The effects of harvesting broodstock from managed overfished stocks remains to be addressed. While the PFEIS<sup>9</sup> indicated broodstock collections are expected to be “small and

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<sup>7</sup> The NOAA Fisheries Service RA may deny use of a proposed site if it poses significant risks of mortality to cultured species due to low DO or HAB, see p. 66.

<sup>8</sup> Origin of giant bloom discovered, [http://news.bbc.co.uk/go/pr/fr/-/earth/hi/earth\\_news/newsid\\_8026000/8026847.stm](http://news.bbc.co.uk/go/pr/fr/-/earth/hi/earth_news/newsid_8026000/8026847.stm)

<sup>9</sup> P. 68.

insignificant,” however, it remains unknown how it would be known that it would be “small and insignificant?” For example, the Council sets an Optimum Yield considered to be conservative in comparison with the Gulf’s ultimate production capacity, which is currently unknown,<sup>10</sup> which begs the question how is it known to be conservative? It is also unclear as to broodstock, which takes priority - wild fish stocks or cultured stocks?

### Sufficient Legal Authorities

Because NEPA’s objectives include improving the exchange of relevant information, increasing communications and trust, facilitating informed decision making, and decreasing the likelihood of costly and lengthy litigation, EPA raises the following legal sufficiency issues in terms of adequately protecting the Gulf of Mexico’s diverse, complex, and stressed ecosystems.

- It is unclear what regulatory authority NMFS and the Councils may have regarding species, such as mussels, not managed under a federal FMP.
- It is unclear whether existing authorities would be sufficient to prohibit the introduction of exotic species as existing federal laws on exotic, nuisance aquatic species are focused on their spread via ship ballast water, not aquaculture activities.
- As stated in the PFEIS, the MSFCMA was written to establish a legal framework for managing *wild* fisheries and many of its legal requirements are applicable to but if applied to aquatic farming may hinder their profitability.
- It is unclear as to how the provision, in the MSFCMA’s Limited Access Privilege Program,<sup>11</sup> that states it: *shall not create or be construed to create, any right title, or interest in or to any fish before the fish is harvested by the holder* applies to the aquaculture operator and investor who would likely expect to have significant financial interest in rights, title, and interest to all the fish contained within its operations prior to harvest.
- The National Marine Fisheries Service interprets the taking of fish from an aquaculture cage as “harvesting” pursuant to the MSA, which subjects aquaculture to be regulated by the size and catch restrictions applicable to all federally managed species, clarification is needed as to whether cages can be stocked outside of fishing season and broodstocks can be harvested without violating existing FMPs. Does this FMP override previously issued FMPs? Will the prior FMPs have to be revised?

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<sup>10</sup> P. 99.

<sup>11</sup> § 303A (3).